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Microsoft Computer Dictionary

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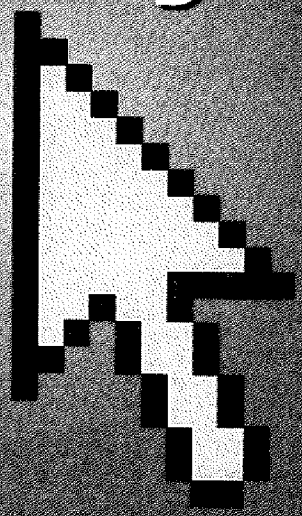

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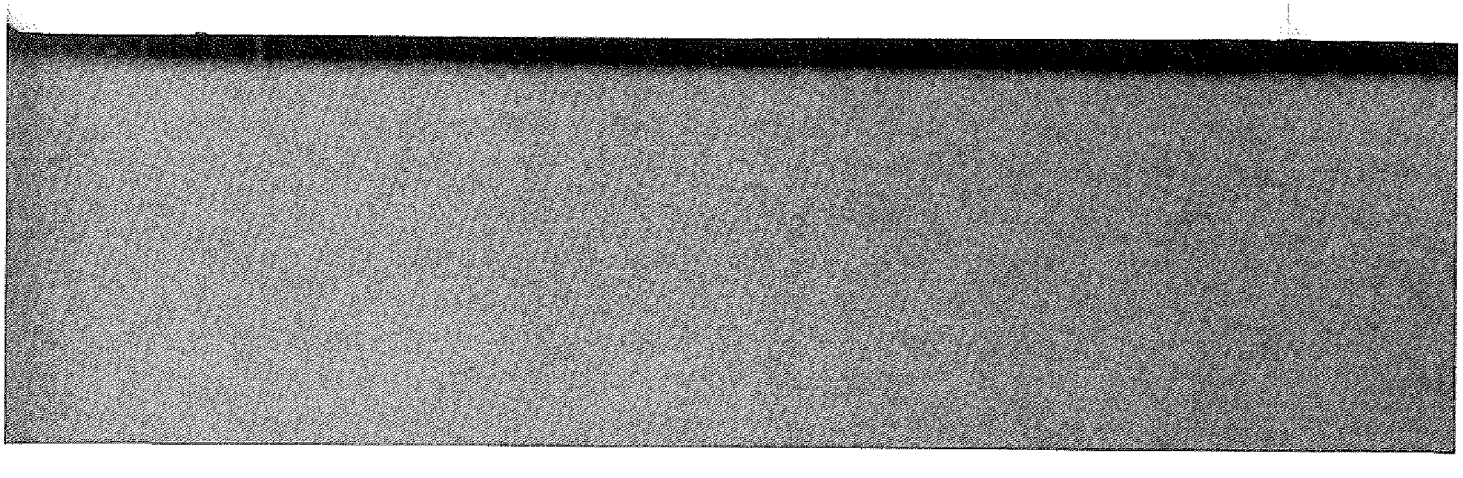

the exponent (E+05) shows the power of 10 to which 6.4 is raised. *Also called:* significand. *See also* floating-point notation.

manual link *n.* A link that requires you to take action to update your data after the data in the source document changes.

many-to-many relationship *n.* A complex association between two sets of parameters in which many parameters of each set can relate to many others in the second set. A many-to-many relationship is most commonly used to describe an association between two tables in which one record in either table can relate to many records in the other table.

many-to-one relationship *n.* **1.** A server configuration in which several small servers replicate the abilities of one larger, more powerful server. *See also* key pair. **2.** In reference to asymmetric key encryption, the idea that many individuals in possession of the public key can decrypt the digital signature of one individual in possession of the private key.

map[1] *n.* Any representation of the structure of an object. For example, a memory map describes the layout of objects in an area of memory, and a symbol map lists the associations between symbol names and memory addresses in a program. *See also* image map.

map[2] *vb.* To translate one value into another. For example, in computer graphics one might map a three-dimensional image onto a sphere. In reference to virtual memory systems, a computer might translate (map) a virtual address into a physical address. *See also* virtual memory.

MAPI *n.* Acronym for **M**essaging **A**pplication **P**rogramming **I**nterface. The Microsoft interface specification that allows different messaging and workgroup applications (including e-mail, voice mail, and fax) to work through a single client, such as the Exchange client included with Windows 95 and Windows NT. *See also* application programming interface.

mapped data field *n.* A field that represents commonly used information, such as "First Name." If a data source contains a "First Name" field or variation, such as "FName," the data source field automatically maps to the corresponding mapped data field.

mapped drives *n.* **1.** In the Windows environment, network drives that have been assigned local drive letters and are locally accessible. **2.** Under UNIX, disk drives that have been defined to the system and can be made active.

MapPoint *n.* Business mapping software introduced by Microsoft as an Office-compatible product in 1999. Designed for use by business people, MapPoint consists of a database of United States maps showing detail down to the level of individual streets and demographic data broken out by state, county, zip code, and other regions. *See also* Office.

margin *n.* In printing, those portions of a page—top, bottom, and sides—outside the main body of text.

mark *n.* **1.** In applications and data storage, a symbol or other device used to distinguish one item from others like it. **2.** In digital transmission, the state of a communications line (positive or negative) corresponding to a binary 1. In asynchronous serial communications, a mark condition is the continuous transmission of binary 1s to indicate when the line is idle (not carrying information). In asynchronous error checking, setting the parity bit to 1 in each group of transmitted bits is known as mark parity. *See also* parity. *Compare* space. **3.** In optical sensing, a pencil line, as on a voting form or an IQ test, that can be recognized by an optical reader.

marker *n.* **1.** Part of a data communications signal that enables the communications equipment to recognize the structure of the message. Examples are the start and stop bits that frame a byte in asynchronous serial communications. **2.** A symbol that indicates a particular location on a display surface.

Mark I *n.* **1.** An electromechanical calculating machine designed in the late 1930s and early 1940s by Howard Aiken of Harvard University and built by IBM. *Also called:* Automatic Sequence Controlled Calculator, Harvard Mark I. **2.** The first fully electronic stored-program computer, designed and built at Manchester University in England. It successfully executed its first program in June 1948. **3.** The first commercial computer, which was based on the Manchester Mark I and released in 1951.

markup *n.* Comments and tracked changes such as insertions, deletions, and formatting changes that you can view or print.

markup language *n.* A set of codes in a text file that instructs a computer how to format the file on a printer or video display or how to index and link its contents. Examples of markup languages are Hypertext Markup Language (HTML) and Extensible Markup Language (XML), which are used in Web pages, and Standard Generalized Markup Language (SGML), which is used for typesetting

and desktop publishing purposes and in electronic documents. Markup languages of this sort are designed to enable documents and other files to be platform-independent and highly portable between applications. *See also* HTML, SGML, XML.

marquee *n.* A nonstandard HTML extension that causes scrolling text to appear as part of a Web page. Currently, marquees are viewable only with Internet Explorer. *See also* HTML, Internet Explorer, Web page.

marquee component *n.* A region on a page that displays a horizontally scrolling text message.

mask *n.* **1.** A binary value used to selectively screen out or let through certain bits in a data value. Masking is performed by using a logical operator (AND, OR, XOR, or NOT) to combine the mask and the data value. For example, the mask 00111111, when used with the AND operator, removes (masks off) the two uppermost bits in a data value but does not affect the rest of the value. See the illustration. *See also* logical operator, mask bit. **2.** In television and display technology, a thin perforated sheet of metal or a close-set series of metal strips on the surface of the screen that helps create a clear, sharp image by ensuring that the electron beam for a particular color (red, blue, or green) strikes only the phosphor it is intended to illuminate, while the phosphors for the other colors are shadowed by the mask. Three types of masks are in use: a shadow mask, with round perforations; an aperture grill, with vertical stripes; and a slot mask, with elliptical openings. *See also* aperture mask, shadow mask, slot mask.

```
  11010101   Data value
AND 00111111 Mask
------------
  00010101   Resulting value
```

Mask.

maskable interrupt *n.* A hardware interrupt that can be temporarily disabled (masked) during periods when a program needs the full attention of the microprocessor. *See also* external interrupt, hardware interrupt, interrupt. *Compare* nonmaskable interrupt.

mask bit *n.* A given bit within a binary mask whose function is to screen out or let through the corresponding bit in a data value when the mask is used in an expression with a logical operator. *See also* mask (definition 1).

masking *n.* The process of using the *mask* operation to perform operations on bits, bytes, or words of data. *See also* mask (definition 1).

mask off *vb.* To use a mask to remove bits from a byte of data. *See also* mask (definition 1).

massively parallel processing *n.* A computer architecture in which each of a large number of processors has its own RAM, which contains a copy of the operating system, a copy of the application code, and its own part of the data, on which that processor works independently of the others. *Acronym:* MPP. *Compare* SMP.

massively parallel processor *n.* A computer designed to perform massively parallel processing.

mass storage *n.* A generic term for disk, tape, or optical disc storage of computer data, so called for the large masses of data that can be stored in comparison with computer memory capacity. *Compare* memory.

Master Boot Record *n.* The first sector of the first hard disk; a physically small but critical element in the startup process on an x86-based computer. When a computer is booted, it processes a series of self-tests and then reads the Master Boot Record, or MBR, into memory. The MBR contains instructions that locate the disk's system (startup) partition, read the contents of the first sector of the system partition into memory, and then carry out the instructions contained in that sector. If the sector represents what is known as a Partition Boot Sector, the instructions found there begin the process of loading and starting the operating system. In other words, the startup process on an x86-based computer is as follows: self-test to Master Boot Record; MBR to system partition and Partition Boot Sector; Partition Boot Sector to operating system; and, finally, a computer ready to go to work. *Acronym:* MBR. *See also* Partition Boot Sector.

master file *n.* In a set of database files, the file containing more or less permanent descriptive information about the principal subjects of the database, summary data, and one or more critical key fields. For example, customers' names, account numbers, addresses, and credit terms might be stored in a master file. *See also* master record. *Compare* transaction file.

master key *n.* The server-based component of software or data protection. In some systems, data or applications are stored on a server and must be downloaded to the local machine for use. When a client requests the data, it presents a session key. If the session key supplied matches the master key, the key server sends the requested packet. *See also* client (definition 3), server (definition 2).

programming requires a similarly logical approach to designing, writing (coding), testing, and debugging a program. Low-level languages, such as assembly language, also require familiarity with the capabilities of a microprocessor and the basic instructions built into it. In the modular approach advocated by many programmers, a project is broken into smaller, more manageable modules—stand-alone functional units that can be designed, written, tested, and debugged separately before being incorporated into the larger program. *See also* algorithm, kludge (definition 2), modular design, object-oriented programming, spaghetti code, structured programming.

programming language *n.* Any artificial language that can be used to define a sequence of instructions that can ultimately be processed and executed by the computer. Defining what is or is not a programming language can be tricky, but general usage implies that the translation process—from the source code expressed using the programming language to the machine code that the computer needs to work with—be automated by means of another program, such as a compiler. Thus, English and other natural languages are ruled out, although some subsets of English are used and understood by some fourth-generation languages. *See also* 4GL, compiler (definition 2), natural language, program.

Programming Language I *n. See* PL/I.

program specification *n.* In software development, a statement of the goals and requirements of a project, as well as the relation of the project to other projects.

program state *n.* The condition of a program (stack contents, memory contents, instruction being executed) at a given moment.

program statement *n.* The statement defining the name, briefly describing the operation, and possibly giving other information about a program. Some languages, such as Pascal, have an explicit program statement; others do not, or they use other forms (such as the main( ) function in C).

progressive JPEG *n.* An enhancement to the JPEG graphics file format that gradually displays a photo-realistic picture in a Web browser, showing increasingly detailed versions of the picture until the entire file has finished downloading.

progressive scanning *n.* **1.** A display technique used on computer monitors in which the image is created, line by line, in a single top-to-bottom sweep of the electron gun. The resulting image is of higher quality than is possible with the interlace scanning used for television sets. Progressive scanning might be used on next-generation digital television equipment. It does, however, require twice the signal bandwidth of interlace scanning. *Compare* interlace scanning. **2.** A line-by-line (rather than every-other-line) technique used with some video cameras to capture images of moving objects. Such cameras are used primarily for tasks such as monitoring assembly lines and traffic flow.

project *n.* An operator in the relational algebra used in database management. Given relation (table) A, the *project* operator builds a new relation containing only a specified set of attributes (columns) of A.

Project 802 *n.* The IEEE project to define networking standards that resulted in the 802.x specifications. *See also* IEEE, IEEE 802.x.

Project Gutenberg *n.* A project that makes the texts of books that are in the public domain available over the Internet. The files for the books are in plain ASCII, to make them accessible to as many people as possible. Project Gutenberg, based at the University of Illinois at Urbana-Champaign, can be reached at mrcnext.cso.uiuc.edu via FTP or through the Web page http://www.promo.net/pg/. *See also* ASCII.

projection-join normal form *n. See* normal form (definition 1).

project life cycle *n.* A sequence of preplanned stages for taking a project from beginning to end.

project management *n.* The process of planning, monitoring, and controlling the course and development of a particular undertaking.

Prolog *n.* Short for **Pro**gramming in **Log**ic. A language designed for logic programming. Prolog evolved during the 1970s in Europe (primarily France and Scotland), and the first Prolog compiler was developed in 1972 by Philippe Roussel, at the University of Marseilles. The language has subsequently attained wide use in the field of artificial intelligence. Prolog is a compiled language that works with the logical relationship between pieces of data rather than mathematical relationships. *See also* artificial intelligence.

PROM *n.* Acronym for programmable read-only memory. A type of read-only memory (ROM) that allows data to be written into the device with hardware called a PROM programmer. After a PROM has been programmed, it